Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the matter of	)	
Amendment of Part 97 of the	)	
Commission's Rules Governing	)	RM-8737
the Amateur Radio Service to	)	
Facilitate Spread Spectrum Communication	)	

Reply Comments by
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Introduction

I, D. Wayne Hoffman, was first licensed as an amateur radio operator in 1961. Throughout this period of time my main operation has been on the VHF and above amateur bands, using homemade, commercial, and modified surplus military equipment. I have made contacts with other amateurs via moonbounce, meteor scatter, ionospheric scatter, lightning scatter, auroral refraction, tropospheric superrefractive ducting, and several other exotic modes of propagation. I like to think that, in some small way, my efforts have contributed to the successful use of the VHF and lower UHF bands that is now so apparent.

I am a Senior Engineer in charge of all telecommunications systems, including voice, data, and other radio systems, for a municipal electric utility.

Summary

I have major reservations concerning RM-8737 as written. While I strongly support the widespread use of Spread Spectrum (SS) techniques, their use with no frequency restrictions will cause major damage to weak signal terrestrial work and the understanding of VHF/UHF propagation characteristics that it supports. I urge that the Commission's relaxation of the SS Rules, as proposed by the American Radio Relay League (ARRL) on December 12, 1995, be accomplished only on specific frequency segments within the Amateur Service bands. Otherwise, widespread use of SS by amateur operators, which I hope will occur, will make reception of weak signals all but impossible in urban areas.

The FCC's current SS rules, and the ARRL in Para 9, go to some length to claim that "unintentional triggering of repeater inputs" is not considered to constitute interference. It appears to me that this is prima facie evidence that they believe that SS operation will result in noise floor increases sufficient to trigger FM repeaters and completely ignore that such noise floor increases would dramatically degrade reception of weak terrestrial or satellite signals.

It is this specific issue that so troubles me. A careful analysis will demonstrate that noise floor increases in excess of 20 dB can be expected. A great many of my most significant contacts are made with signals no more than 1-2 dB above my noise - am I to just forget about ever making such memorable contacts again?

My Proposal

As already stated, I believe that SS operation should be encouraged. However, I contend that SS should be restricted to certain frequency segments so as to offer minimal interference to other operation. Statements limiting SS to operation on a non-interfering basis are essentially meaningless, since there is no practical way to enforce this requirement. Who defines interference? If unwanted triggering of a repeater isn't interference, is prevention of working DX interference?

Limiting SS to certain subbands is consistent with Commission policy in the Amateur Service. I cite the fact that voice operation, VHF beacons, FM on 10 meters, and many other activities have been be limited to certain segments on the HF and VHF amateur bands for many years. SS stations, being a very wideband mode, will have significant emissions beyond their nominal bandwidth. These should be restricted by the generally accepted 40 or 60 dB down at band or subband edges.

I would like to see a great increase from the present insignificant use of SS. Nevertheless, while SS may be compatible with relative high signal strength narrowband modes such as FM, it is not compatible with relatively weak signal modes such as terrestrial weak signal work.

To achieve the full potential of SS, and not destroy present VHF/UHF operation, I strongly recommend that SS be authorized only in the following segments of the Amateur Service bands:

905 - 928 MHz
1240 - 1260 MHz
2410 - 2450 MHz
3300 - 3445 MHz
All above 5500 except 5750 - 5770 MHz and 10.360 - 10.380 GHz.

These proposed frequencies also provide protection for existing weak signal operation near 432, 902, 1296, 2304, 3456, 5760 and 10,368 MHz, as well as amateur satellite operation.

Conclusion

I have described how SS will be a poor neighbor if allowed to share the same subbands as VHF/UHF weak signal operation. The Commission should follow these recommendations in formulating new SS rules designed to foster its widespread use among amateurs. I further recommend that the FCC place no greater restrictions on SS use than absolutely necessary. Such a course will foster growth of SS among amateurs in their historic pursuit of new technologies and the use of higher and higher frequencies, but not disrupt the continuation of other valuable amateur operation.

Respectfully submitted,

D. Wayne Hoffman

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March 8, 1996